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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,618	03/05/2002	Norio Maeda	33093M006	9087

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EXAMINER

O MALLEY, KATHRYN S

ART UNIT	PAPER NUMBER
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3749

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/936,618

Applicant(s)

MAEDA ET AL.

Examiner

Kathryn S. O'Malley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 22-28 is/are rejected.
- 7) ☒ Claim(s) 20 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/28/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 7-14, 17, 22-25, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,653,045 to Ferrell.

3. Ferrell teaches an apparatus and method of its use comprising holding substrates 601 at an angle of 0 degrees with respect to vertical in a processing vessel 602, purging vessel 602 with nitrogen, introducing a cleaning fluid 622, using low pressure nitrogen and nozzle 610 to form individual liquid drops of a drying fluid 607, introducing drying fluid 607 at room temperature under liquid condition into processing vessel 602 onto the fluid face 622 of the cleaning fluid, lowering the fluid face 622 of the cleaning fluid with respect to the substrates, and purging the vessel 602 with hot nitrogen. Note column 10, line 10- column 11, line 8; column 11, lines 30-31; and Figures 6 and 7.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 15, 16, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrell as applied to claims 1, 10, and 23 above, and further in view of US Patent 6,216,709 to Fung et al.

6. Ferrell does not teach a pair of supporting members with grooves for supporting the wafers at different positions. However, Fung et al. does so in a similar method and apparatus. Note holders 12 and 24 in column 2, lines 46-67 and Figure 1b. As Fung et al. teaches that supporting the substrates in multiple positions and with grooves leads to less water spots left on the substrates after drying, it would have been obvious to one of ordinary skill in the art to modify the supporting position of Ferrell with the multiple supporting positions of Fung et al.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrell as applied to claim 10 above, and further in view of US Patent 6,152,153 to Takase et al.

8. Ferrell does not teach moving the nozzle closer to the substrate after it has been removed from the cleaning solution. However, Takase et al. does so in a similar dryer. Note column 10, lines 42-63 and Figures 9 and 10. As moving the nozzles across and toward the substrate with result in more precise directing of the drying fluid, it would have been obvious to one of ordinary skill in the art to modify the dryer of Ferrell with the moving nozzles of Takase et al.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrell as applied to claim 10 above, and further in view of US Patent 6,247,479 to Taniyama et al.

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10. Hamano does not teach circulation means for the liquid components used in his drying method and apparatus. However, Taniyama et al. does so in a similar method and apparatus. Note column 7, lines 27-49 and Figure 4. As Taniyama et al. teaches that circulation means will keep liquids for substrate treatment purified, leading to less contaminants on the finished substrate, it would have been obvious to one of ordinary skill in the art to modify the liquid drying fluid supply of Ferrell with the circulation means of Taniyama et al.

Allowable Subject Matter

11. Claims 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathryn S. O'Malley whose telephone number is (703)308-2844. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on (703)308-1935. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KSO


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